

Attorney Docket: K-2081  
S.N.: 10/766,396

### REMARKS

Claims 1-17 are pending in the application. By this Amendment, Claims 1, 5 and 9 are amended. Favorable reconsideration is respectfully requested in light of the following Remarks.

Entry of this Amendment is proper under 37 CFR §1.116 because this Amendment: (a) places the application in condition for allowance (for the reasons discussed herein); (b) does not raise any new issue requiring further search and/or consideration because the amendments amplify issues previously discussed throughout prosecution; (c) does not add claims without deleting a corresponding number of claims; and (d) places the application in better form for appeal, should an appeal be necessary.

With respect to item (b) above, independent Claims 1, 5 and 9 filed in the Amendment dated November 15, 2005 defined a zero centerline toolholder assembly in which a centerline, LT, of the toolholder is aligned at a fixed, non-zero angle,  $\delta$ , with respect to an axis, P, that is substantially perpendicular to a longitudinal axis, LW, of a work piece based on a geometry of the cutting insert.

It is respectfully submitted that the scope of the claimed invention recited in independent Claims 1, 5 and 9 as amended herein has not changed or is narrower in scope as compared to the earlier-filed Claims 1, 5 and 9. Specifically, the independent Claims 1, 5 and 9 as amended herein more clearly define the feature of the centerline, LT, of said toolholder being aligned at a single, fixed, non-zero angle,  $\delta$ , with respect to an axis, P, that is substantially perpendicular to a longitudinal axis, LW, of a work piece based on a geometry of the cutting insert for the duration of a machining operation to more clearly distinguish this feature from the cited art. Thus, a new search and/or consideration is not required by the Examiner with respect to amended Claims 1, 5 and 9 as amended herein. In view of the foregoing, entry of this Amendment is thus respectfully requested.

#### I. Miscellaneous

By this Amendment, Paragraph [0006] of the specification is amended to correct a typographical error. In addition, Paragraphs [0015] and [0022] is amended to further define that the centerline, LT, of the toolholder 104 forms a fixed, non-zero angle,  $\delta$ , with respect the axis, P, which is substantially perpendicular to the centerline, LW, of the work piece 102.

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The magnitude of this fixed, non-zero angle,  $\delta$ , depends on the tool configuration and the geometry of the cutting insert 102.

Support for the amended paragraphs can be found in Paragraph [0020] of the originally-filed specification. Specifically, Paragraph [0020] describes the toolholder assembly 10 being depicted in Figure 1 as "a left-handed configuration tool because of the angle,  $\delta$ , with respect to the axis, P, such that the nose radius 102a of the cutting insert 102 is toward the direction of cut. Thus, it is important that the cutting insert 102 has the appropriate rakes and geometry required for a left hand tool." Thus, no new matter has been added.

## II. The Claims Define Patentable Subject Matter

1. The Office action rejects Claims 1, 4, 9, 12, 15 and 17 under 35 U.S.C. §103(a) over Yamazaki et al. (U.S. Patent No. 6,453,782, hereinafter "Yamazaki") in view of Aebi et al. (U.S. Patent No. 4,940,369, hereinafter "Aebi"). The rejection is respectfully traversed.

Yamazaki appears to disclose a machine tool that is designed to produce various thread forms with a minimum of insert styles. The machine tool includes a slide or carriage capable of moving in a conventional X-Z plane. *See col. 2, lines 46-53.* A tool base mounted in the slide is capable of being inclined at various angles with respect to the axis of the work piece. *See Abstract.* An insert is installed on the tip of the main body of the tool rest. By inclining tool base, the machine tool of Yamazaki provides a method for varying the lead cutting angle of the insert in the X-Z plane. *See Figs. 3 and 4b.* This range of angles only can occur in the X-Z plane and cannot exceed a total travel of 180 degrees in the X-Z plane. The various angles of inclination allow multiple thread forms to be turned with a single insert style. *See col. 1, lines 48-54.*

Aebi appears to disclose a milling cutter with indexable inserts having a general shape of a parallelogram. *See col. 3, lines 3-11.*

Applicant asserts that the Office action fails to establish a *prima facie* case of obviousness. *See MPEP §2143.* Specifically, there is no mention in Yamazaki or Aebi of at least the feature of a cutting insert mounted to a toolholder having a nose radius with a center, RC, that is aligned with a centerline, LT, of the toolholder, and wherein a centerline, LT, of the toolholder is aligned at a fixed, non-zero angle,  $\delta$ , with respect to an axis, P, that is

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substantially perpendicular to a longitudinal axis, LW, of a work piece based on the geometry of the cutting insert, as recited in amended Claims 1, 5 and 9. In addition, there is no mention in Yamazaki of a tool spindle, as recited in Claim 5.

As discussed and agreed during the telephone interview, Yamazaki requires that the machine tool 1 use computed cutting patterns PAT1 for the square screw and PAT2 for the triangular screw that vary the degree of the B axial angle, as shown in Figs. 4a and 4b. To the contrary, the claimed invention is directed to aligning the toolholder at a fixed, non-zero angle,  $\delta$ , with respect to an axis, P, based on the geometry of the cutting insert. Aebi adds nothing to overcome this shortcoming in Yamazaki.

In view of the foregoing, the Office action fails to establish a *prima facie* case of obviousness.

For at least this reason, Claims 1, 5 and 9 are allowable over the applied art. Claims 4 and 15, which depend from Claim 1, and Claims 12 and 17, which depend from Claim 9, are likewise allowable over the applied art. Withdrawal of the rejection is respectfully requested.

2. The Office action rejects Claims 5, 8, 13, 14 and 16 under 35 U.S.C. §103(a) over Yamazaki and Aebi, and further in view of Katoh et al. (U.S. Publication No. 2004/0003690, hereinafter "Katoh"). The rejection is respectfully traversed.

Claims 5, 8, 13, 14 and 16 depend from Claims 1, 5 and 8. As discussed above, there is no mention in Yamazaki and Aebi of at least the feature of a cutting insert mounted to a toolholder having a nose radius with a center, RC, that is aligned with a centerline, LT, of the toolholder, and wherein a centerline, LT, of the toolholder is aligned at a fixed, non-zero angle,  $\delta$ , with respect to an axis, P, that is substantially perpendicular to a longitudinal axis, LW, of a work piece based on the geometry of the cutting insert, as recited in amended Claims 1, 5 and 9. It is respectfully submitted that there is no mention in Katoh of at least this feature.

In view of the foregoing, the Office action fails to establish a *prima facie* case of obviousness.

For at least this reason, Claims 5, 8, 13, 14 and 16 are allowable over the applied art. Withdrawal of the rejection is respectfully requested.

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Favorable consideration and prompt allowance of the application is

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earnestly solicited.

It is believed that any additional fees due with respect to this paper have already been identified. However, if any additional fees are required in connection with the filing of this paper, permission is given to charge account number 50-2867 in the name of Kennametal, Inc..

Should Examiner Addisu believe anything further would be desirable in order to place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney at the telephone number listed below.

Respectfully submitted,

Dated: May 9, 2006

By 

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